R&D Program: TOWNS

US Army Corps of Engineers®

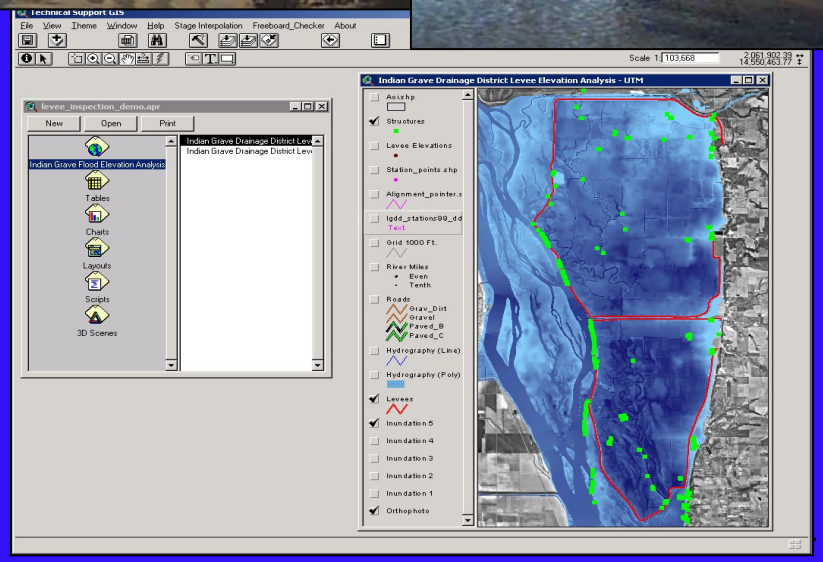
Work Unit: Integrated GIS and Modeling Methodologies for Inland Flood Protection Systems

Needs & Problems Addressed:

- EM & Post flood assessment require integrated GIS/H&H/inspection approach
- USACE's current modeling capabilities and tools are not typically built for integrated use across business practices

Objectives:

- Integrate joint geospatial data access, modeling, and decision support aids throughout USACE
- Extend existing geospatial display and analysis tools to inland flood protection systems



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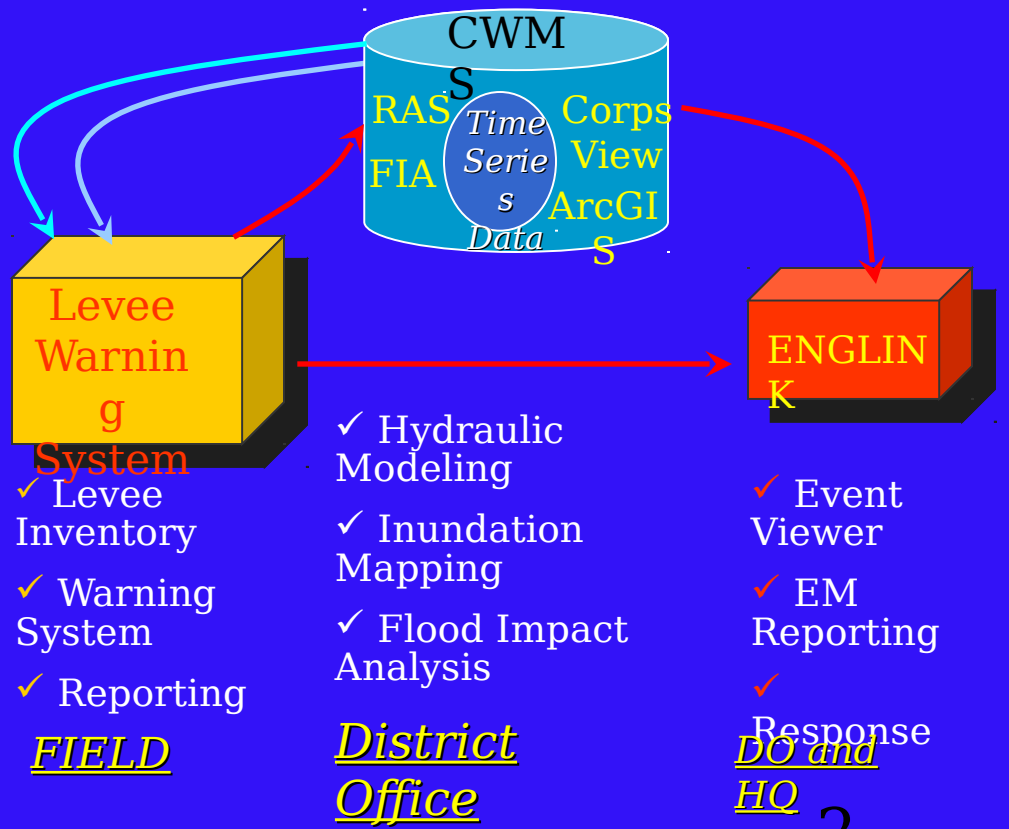
Work Unit Funding Profile:

FY03	FY04	FY05	Total
$ 250k	$ 150k	$ 100k	$ 500k

Comments on funding plan:

Excellent products with modest funding in FY02 Innovative Flood Technologies Program work unit

SYSTEM SCHEMATIC



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Business Program/Missions Areas Supported:

- Inland Navigation __ %
- Coastal Navigation __ %
- Coastal Storm Damage Reduction 20%
- Inland Flood Control/Damage Reduction 30 %
- Environmental Protection & Quality __ %
- Multi-Purpose (Hydropower, Rec & Water Supply) __ %
- Emergency Management 50 %
- Regulatory __ %
- Support for Others __ %

(Must to add to 100%) Total: 100 %

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CW Strategic Goals Check List: (check if applies)

- Provide sustainable water resources development & mgmt _X_
- Restore past environment degradation ___
- Provide project services of high quality _X_
- Reduce losses from natural & manmade hazards _X_
- Supports being a world class technical leader _X_
- Addresses strategic or system needs in a framework or integrated approach by developing:
  - Methods or decision support tools _X_
  - Technology to improve life cycle productivity _X_
  - Technology to monitor systems, provide feedback and develop operating guidance _X_

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Which “short term” field needs does this support:

- Expedites decision making
- Improves operation and maintenance of flood damage reduction structures
- Reduces life-cycle costs

Field Review Group Relative Ranking:

- Highest ranked work unit in March 02 Innovative Flood Technologies Program FRG
- TOWNS FRG planned for 21-22 AUG 02

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Listening Sessions Check List: (check if applies)

- Improves data sharing/exchange with the public in these areas:
  - Provides one stop shop for maps & data for basin wide planning _X_
  - Provides data to make informed decisions _X_
  - Provides a system for basin wide planning ___
  - Provides information about what is happening at Corps facilities _X_ (up to date web sites)
- Tech Transfer plan to include educating the public _X_
- Coordinate research, models, analysis with regulatory agencies to insure results will be accepted _X_
- Develop R&D products:
  - For watershed management plans, not just at the project level _X_
  - To include aesthetics as components of all projects ___
- Create better models for ground & surface water _X_

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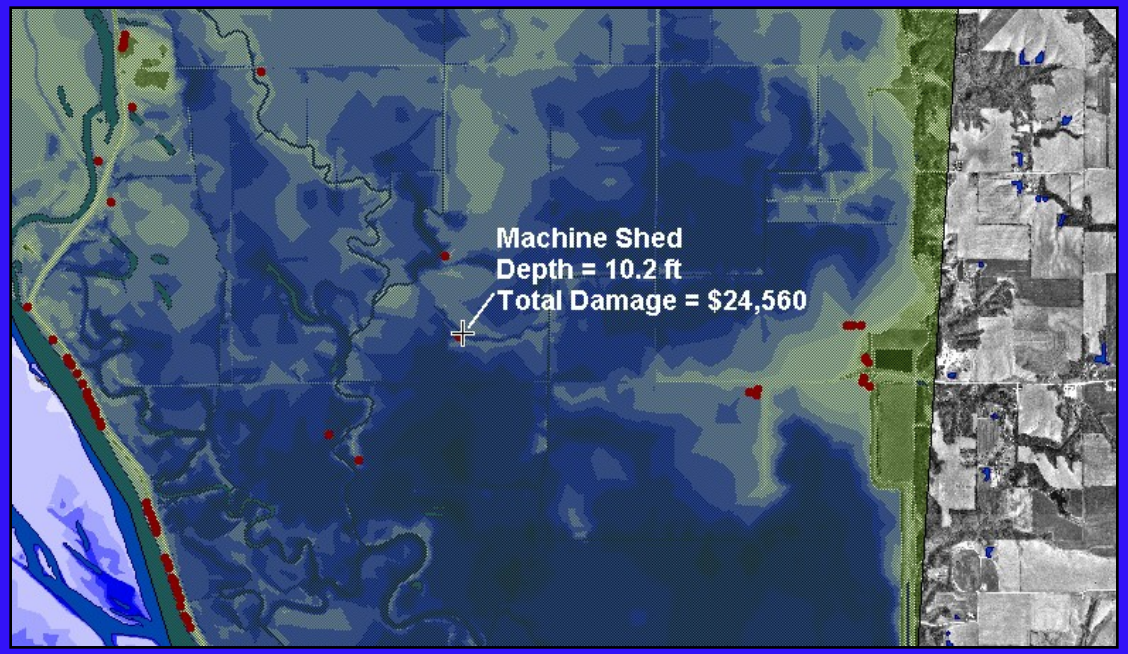

Products:

- Levee Inspection Tool (FY02)
- Initial demonstration (Rock Island District)
- Capability for on-the fly analysis of changes to flood protection infrastructure during flood fighting (FY02)
- Enhanced 2D overland and coastal flow capabilities
- Initial Demonstration Project Interim Report
- Broadened Demonstration System Design Document
- Versions 2.0 and 2.5 Software and associated interim reports
- Final report, software, users manual, and technical guidance memorandum

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Benefits

- Direct:
  - Provide decision support tools at a lower cost and minimize training time for staff needing these new tools
  - Improved data collection and data management methodologies
  - Integration of models, enhanced Flood Damage Analysis Model
  - Automated procedures for decision support
- Indirect:
  - Enhances capabilities
  - Provides fundamental integrated modeling capability useful in other research and District work
  - Attains risk reduction

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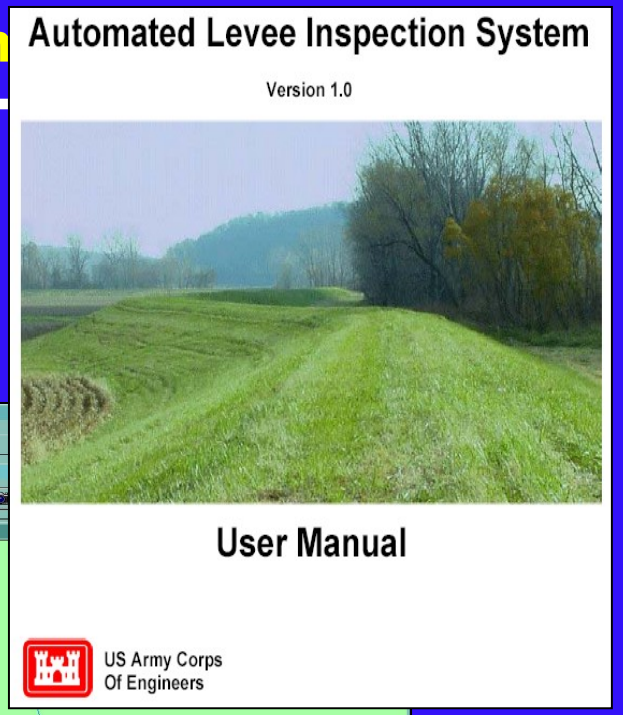
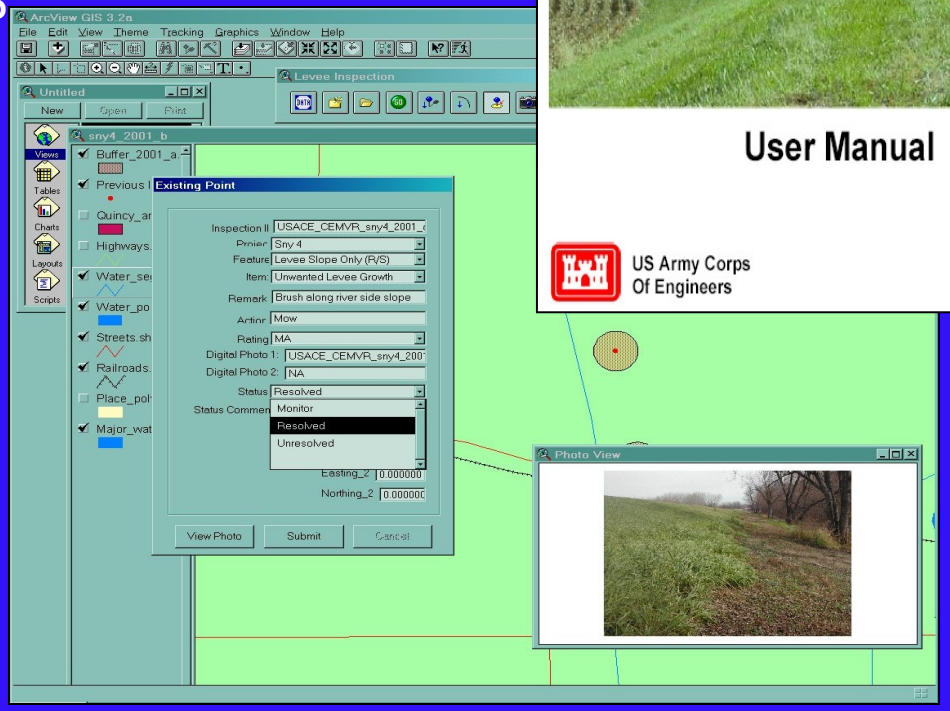
Technology Transfer Plan:

- Knowledge gained from this work unit will be made available to educate the public through the TOWNS website
- Results coordinated with regulatory agencies
- Publish and distribute reports, user manual, and technical guidance memorandum
- Demonstration Project
- Included in PROSPECT training





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Why should the Corps fund this R&D, instead of private industry and/or others:

- Addresses particular Corps problems using Corps-developed models

What is Impact if not started:

- If not continued, system-wide analyses based on integration of GIS/H&H/inspection data will not be possible
- Inundation mapping due to FDR structure failure will be more time consuming and less accurate